AN IMPROVED METHOD OF HOUSE VENTILATION,

BY

JOHN H. GRISCOM, M. D.,

WITH EVIDENCES OF ITS

EFFICACY AND GENERAL APPLICABILITY.

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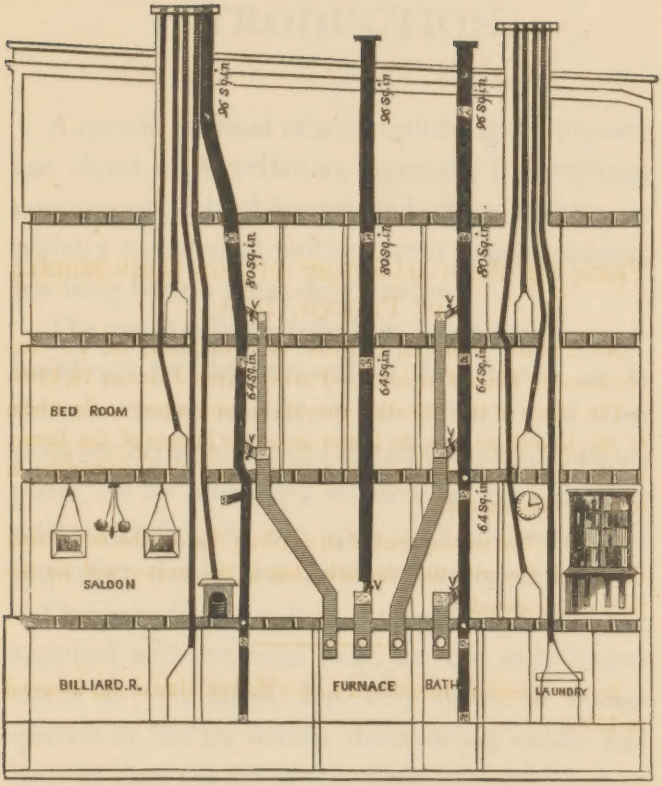
From the Annual Report of the Commissioner of Patents, 1859.

No. 22,646. John H. Griscom, of New-York, N. Y. *Improvement in House Ventilation.*—Patent dated January 18, 1859.—The nature of this invention consists in using a part or the whole of the heated air from the heater or hot-air furnace of the house, as the means of warming a flue or tube, and thus converting it into a ventilating shaft.

Claim.—The employment of an auxiliary flue or tube, connecting the hot-air flue with the ventilating flue in the manner and for the purposes proposed.

By the American Institute, a Large Silver Medal was awarded in 1859.



Elevation of the west wall of the residence of E. V. Haughwout, Esq., Gramercy Park, Twenty-first Street, New-York, showing the position and connections of the warming and ventilating flues. The letter V indicates the valves in the connecting tubes; the figures indicate the areas of the ventilating flues in square inches. See testimonial from Mr. Haughwout, page 10.

INTRODUCTION.

A specific method of accomplishing the important object of Ventilation, especially in dwellings court-rooms, school-houses, and other edifices in which a mechanical motive power is unattainable, has long been a great desideratum.

The means chiefly relied on, heretofore, in such buildings, for the removal of the vitiated air, is the movement caused by the difference of temperature between the inside and the outside atmosphere, (as by opening a window, or by a shaft or well extending to the open air,) confessedly an imperfect, feeble, and unreliable arrangement.

Ordinary flues, built in the cold walls, and unsupplied with artificial heat, are not only inoperative as ventilators, but very often, in consequence of the air within them being colder and heavier than the air of the room with which they are connected, a descending current of cool air occurs instead of the desired ascending current.

On the other hand, a heated flue, such as an ordinary fire flue, will operate as a ventilating shaft as long as its internal temperature is higher than that of the room, and no obstructions inter-

rupt its calibre, the effect being proportioned to the temperature of the flue.

To secure a high temperature within a ventilating flue, and to be able to multiply heated flues, are the considerations demanded for the thorough and efficient ventilation of all ordinary buildings.

These desiderata are obtained by the plan of the undersigned, and it is believed to be the only known systematic method by which SUFFICIENT, RELIABLE, and perfectly CONTROLLABLE ventilation can be secured in dwellings, school-houses, churches, court-houses, stores, and all edifices which are warmed by hot-air furnaces of any description.

The cost of its introduction into new buildings is very trifling, and its subsequent operation is maintained without any expense whatever.

The connections may be so arranged as to ventilate almost any apartment, wherever situated, and from either the ceiling or the floor, or both. The ventilation of water-closets, also, downwards or laterally from the seat, may be secured by it.

In some instances, it is applicable to houses already erected.

JOHN H. GRISCOM.

42 EAST 29TH ST., NEW-YORK.

Description of the Improved Method of Ventilation.

(*Extracted from the "Report on the Importance and Economy of Sanitary Measures to Cities," by John Bell, M. D., adopted by the Third National Quarantine and Sanitary Convention, held in the City of New-York,* 1859.)

"Among the latest and most valuable for efficiency and general applicability, is the plan of ventilation of dwellings and other edifices, suggested and put in execution by Dr. J. H. Griscom, of New-York. It pertains to the 'chemical method,' the motive power of the air being heat, but requiring no extra expenditure of fuel; the heat used for the purpose being only the waste heat of the furnace by which the house is warmed. The arrangement consists in the construction of independent ventilating flues in the walls of the house, in proximity to the hot-air tubes, so that the two may be connected together by means of a lateral or branch tube, by which a current of hot air may, at any desired moment, be transmitted from the hot-air tube to the ventilating flue. By this means, the ventilating flues, which terminate in the open air like an ordinary chimney, will be warmed by the hot air from the furnace, when the

ordinary hot-air register is closed, as at night in a dwelling, or in a school-house after school hours.

"If properly constructed as to shape and material, the walls of a flue will, after a current of hot air has passed through it a short time, become sufficiently heated to rarefy the air within; thus giving the flue a good ventilating power, even after the current of hot air has been withdrawn. For example, if the hot-air register of a parlor be closed at ten o'clock at night, and the heat, instead of being thrown back into the furnace, is allowed to pass through the lateral tube into the ventilating flue, and so continue till six the next morning, it is evident that, during those eight hours, the interior of the ventilating flue must become thoroughly heated, so that the next day, when the current of hot air is restored to the parlor, the heated sides of the ventilating flue will continue to rarefy the air within them for many hours, and perhaps even days, afterward.

"There being no danger of a reaction of the air of the flue through the ventilating register (as is the case when ventilating openings are made in ordinary fire-flues,) connections with the apartment to be ventilated may be made at any point, and even carried to the opposite side of the

house, between the beams of the ceiling, to ventilate distant apartments. Dr. Griscom's method has the advantage of being applicable to all edifices warmed by hot-air furnaces of any description, which, in general, are those most needing ventilation. This arrangement may be introduced into many houses already erected, by connecting the hot-air tubes with such of the ordinary chimney-flues as are not used with fire.

"One of the principal advantages appertaining to this plan, is the capability of having a LARGE NUMBER of ventilating flues put in connection with the furnace. In fact, the number may correspond with the number of hot-air registers, and thus any desirable amount and extent of ventilation be obtained."

In addition to the advantages enumerated in the foreging extract, is that of avoiding the danger of fire, incurred by overheating the-hot air tubes when the registers are closed, as the hot air then passes up through the ventilating shaft, instead of being confined below.

TESTIMONIALS.

NEW-YORK, *March* 12, 1862.

DOCTOR GRISCOM:

My Dear Sir,—I have very great pleasure in expressing my perfect satisfaction with the mode adopted by you in the ventilation of my dwelling-house, and if I was building again, would make this an indispensable part of the construction of the house.

Yours, respectfully,

E. V. HAUGHWOUT.

AMERICAN MUSEUM,
NEW-YORK, *March 20th*, 1862.

MY DEAR SIR:

It affords me much pleasure to inform you that the plan of *Ventilation* which, at my request, in October last, you suggested for this Museum, has proved a perfect success. The effect of it, in the apartments to which it has been applied, is the constant removal of the impure air, at a rate amounting, as a sailor would say, to a "fresh breeze," while it is at all times under complete control.

The result cannot be better illustrated than by stating the facts relating to the welfare of the *Whales*, which have been and are now on exhibition. These animals, in their native region, of course breathe only

the purest air of the ocean, and as may be supposed, though it was entirely overlooked at first, would soon feel the effects of any impurity of that element, and especially would they be injured by inhaling, in a low ceiled room, in a crowded city, the air contaminated by the respiration of several thousands of people daily, and the constant combustion of gas from a score of burners.

The unfortunate consequence of such a "change of air" upon the first two specimens of this interesting creature, brought from a distance of several thousand miles, at great expense, was, that one of them died in twenty-four hours, and the other in about forty-eight hours. They were undoubtedly poisoned by the impure air of the apartment, but this cause did not occur to me until too late to remedy the evil.

Being determined to try again, with another specimen, this unpleasant experience compelled me to consider the best means of avoiding a repetition of such a catastrophe, and I was contemplating the erection of a steam-engine for the purpose of forcing a current of fresh air into the room, when, at my request, you proposed a method for the removal of the foul air, leaving the fresh air to find its own way in; which I immediately caused to be put in execution. Soon after the completion of the plan proposed by you, the whale now here was introduced, and "there she blows" yet, though four months older, with as much apparent comfort and satisfaction as in its "own native home of the ocean."

Stronger evidence of the effects of impure air, the value of pure air, and the efficacy of your principles and practice of ventilation, cannot be found, and I regard the latter as one of the interesting objects of my institution.

Very truly, yours,

P. T. BARNUM.

Dr. Jno. H. Griscom.

American Museum, *March* 21, 1862.

I fully concur with Mr. Barnum in his statement as to the cause of the premature death of the first two whales introduced into his Museum, and also as to the efficacy of the method of ventilation of the tank room introduced by Dr. Griscom in preserving the life of the present one, of which I have the special charge, and which I brought from its native waters. The room has been visited on some occasions by at least three thousand persons in a day, but the ventilation has proved fully equal to the emergency; and to this do I attribute the prolongation of the life of the present incumbent of the tank over that of its predecessors.

H. D. BUTLER.